

Northern Michigan University (Marquette Co, MI)

CS201-01-22F: Programming In C++ (Andrew A. Poe)

Practice Quiz 9

Wednesday 16 November 2022 11:00 A.M. EST

Time: 15 minutes.

```
class LL {  
private:  
    LLN *head;  
};
```

```
class LLN {  
private:  
    string s;  
    LLN *next;  
};
```

Write code for the method: `void LL::SwapLastTwo () ;`

This method swaps the last two nodes in the linked list using pointer manipulation only. (Do not create or destroy nodes. Do not move data fields around.) If the list has fewer than two elements, this method should do nothing. If the original list were `-->A-->B-->C-->D`, after running this method, the list will be `-->A-->B-->D-->C`. Use recursion only; do not use loops.

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```
void LL::SwapLastTwo () {  
  
    if (!head || !head->getnext()) return;  
    if (head->getnext()->getnext() == NULL)  
    {  
        LLN *t = head->getnext();  
        head->getnext()->setnext(head);  
        head->setnext(NULL);  
        head = t;  
    }  
    else head->SwapLastTwo () {  
}
```

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```
void LLN::SwapLastTwo () {  
  
    if (next->getnext()->getnext()==NULL) {  
        LLN *t = next->getnext();  
        next->getnext()->setnext(next);  
        next->setnext (NULL);  
        next = t;  
    }  
    else next->SwapLastTwo ();  
}
```